



APPENDIX "A"

Leaflet No. 8 - 1983 - Coconut

An island food

Coconut trees; Nut bearing palms

Food value

Non food uses

Coconut foods

Preparation and preservation

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An island food

The coconut is a valuable food in the Pacific Islands. It is a staple food on atolls and important on other islands. This local food is inexpensive and readily available. It has many food uses. People should know the food value of the coconut so that they will continue using it.

Eating coconuts helps Pacific people to stay healthy. For example, people who are sick with diarrhoea drink green coconut water to get fluids and minerals back that have been lost. In emergencies, doctors have used coconut water as an intravenous fluid. Fermented coconut is a good food for pregnant women because it supplies vitamins they need. Also, coconut cream is an energy food; it is a good addition to baby foods

because a small amount supplies much energy.

As coconut trees can survive with little care, have a long life (70 to 80 years), and grow throughout the Pacific, the coconut will continue to be a valuable Pacific food.

A dwarf variety of coconut tree is short, but has a large number of coconuts.

Coconut trees: Nut bearing palms

The coconut tree has the scientific name *Cocos nucifera*. It is a tall tree with a long trunk and a crown of leaves. These long fan-shaped leaves surround the growing point of the tree. Coconuts grow on stalks from inside the base of the leaves.

There are many varieties. Dwarf varieties grow to about 4 metres (14 feet) and flower about three years after planting. The tall varieties grow to 21 to 25 metres (70 to 80 feet) and flower in about eight years. Some coconuts are crosses between dwarfs and tails.

The tree bears nuts all the year round. They may be different sizes, shapes, colours, and weights. The nuts are either harvested when they are young, or left to ripen and fall. It takes about a year after the tree flowers for the nut to mature. Coconuts are mature when the water inside can be heard when the nuts are shaken.

There is a close connection between healthy leaves and how many coconuts are produced. Good healthy leaves make a lot of food energy that is stored in the coconut. Taking good care of coconut trees and not using leaves for other reasons will result in more coconuts.

Percentage of daily needs of an adult woman, filled by one medium drinking coconut (about 1½ cups)¹

Percentage of daily needs of an adult woman, filled by 1½ cups of fresh coconut toddy.¹

Percentage of daily needs of an adult woman, filled by one can of soft drink, (about 1½ cups)¹

¹ From *Food composition tables for use in the Pacific Islands*, South Pacific Commission, 1983.

Food value

Coconuts are both an energy food and a protective food. The mature coconut is an energy food because it contains a lot of fat. Coconut toddy (see section on coconut foods) and green nuts are health or protective foods because they contain large amounts of some vitamins and minerals that are necessary for good health.

Vitamin C keeps the body tissues strong, helps the body use iron, and aids in chemical actions in the body. Fresh coconut toddy is high in Vitamin C. Green coconut water, the germinating coconut, and the heart of the coconut palm also have a fair amount of Vitamin C.

The bar graphs show that coconut drinks are more nutritious than soft drinks. Soft drinks are usually only sugar, colouring, and water, and they are expensive. They provide little food value for the amount of money spent. Drinking green coconuts or toddy is best for Pacific people, because they are inexpensive and contain other nutrients in addition to energy.

There are other vitamins in coconut. **Vitamin B₁** (thiamin), **Vitamin B₂** (riboflavin), and **niacin** are found in coconut and toddy that are slightly fermented. Yeast cells that grow in fermented food contain these vitamins. Vitamin B and Niacin help the body to convert carbohydrates into energy and heat. Vitamin B2 is necessary for normal growth and healthy eyes. Also found in coconuts are minerals such as **iron**, which makes blood strong.

There is not much protein and calcium (which the body needs to grow and be strong) in coconut foods. High protein foods, such as meat, fish, eggs, beans, and leafy vegetables, should be eaten with coconut for a balanced diet.

Non food uses

Coconut products are used by people around the world. Oils pressed from copra are used in soaps, cosmetics, and hair oil. The fibres from coconut husks make mats, mattresses, and rope. Coconut shells are used for utensils, cups, bowls, bottles, lamps, buckles, and ornaments.

Coconut leaves are used for making mats, baskets, hats, brooms, fans, and thatching. Palm mid ribs make tongs, toys, whistles, fences, and walls. The trunks, which are so hard that they must be cut with specially tipped blades, make timber, furniture, and fence posts. Charcoal is made from any waste trunks or shells.

Coconut foods

In some places the **heart of the palm** is boiled for use in salads. The coconut tree dies when the heart is removed because it is the tree's growing centre.

Making **toddy** also stops the growth of coconuts. Toddy is made by binding and cutting a newly formed coconut flower bud in a special way. The top is cut off and shaved twice daily until the sap starts to drip out. A coconut shell or bottle catches the sap. Toddy is collected twice daily. Fresh, it is excellent for babies. It is drunk fresh, used as a flavouring, or saved for other uses. If allowed to ferment, an alcoholic beverage is made.

A variety of coconut tree found in some parts of the Pacific has part of the coconut **husk** that can be eaten. People chew the sweet and fairly soft husk. The small nuts formed after the flower has set on trees of this variety are also eaten. Children like this sweet-flavoured treat.

The water from **green nuts** is used for drinking and soups. If someone has diarrhoea, drinking coconut water replaces fluids and minerals that the body has lost. The flesh is soft and spongy, making an excellent baby food.

Half-ripe coconuts have a layer of soft, easily digested flesh. It is either sliced and eaten, or chopped and used in other dishes.

Mature coconut flesh has many uses. It can be eaten plain. Dried, it makes a delicious snack. Fermented, it has vitamins that pregnant women need. Grated, it is cooked or is squeezed to make coconut cream. Coconut cream flavours fish, seafood, and vegetables cooked in it.

Fermented ripe nuts have a tough flesh that is sour and oily. People who eat it enjoy the special flavour.

Germinating nuts are ones that fall to the ground and sprout. The water becomes a cotton-like mass. It is eaten raw, alone, or with the flesh of the coconut. Sometimes it is

scraped out, mixed with toddy, and eaten with fish. It may be removed and boiled or baked, or the husked nut may be baked whole. It makes a soft food for babies and elderly people.

Preparation and preservation

Many food products are prepared from toddy in places where these products are hard to buy:

Yeast develops when fresh toddy is mixed with flour to form a dough. It is used to make bread.

Vinegar is prepared from fresh toddy that is allowed to ferment to an acid stage. It is used in recipes requiring vinegar, or to flavour foods.

Palm syrup, a sweetener, is made by boiling toddy until it is thick. It can be mixed with four parts water to one part palm syrup to make a sweet drink. Using palm syrup makes buying expensive imported drink mixes unnecessary.

Caramel-like sweets can be made by boiling the toddy until it crystallises. Even though it is not a good idea to eat a lot of sweets, these can take the place of expensive sweets from the store.

Coconut cream is the rich liquid that is squeezed out of grated coconut. It should not be confused with coconut water. Coconut water is the liquid inside the nut. Squeezed grated coconut, with only a little added water, makes thick coconut cream. Thin coconut cream is made when more water is added to the grated coconut before squeezing. Coconut cream can be frozen or canned.

Grated coconut flesh can be frozen. Pack it tightly in plastic bags before freezing. Another way of preserving coconut is to dry it in a very slow oven, or by using the sun-drying method below:

Dried grated coconut:

1. Grate a mature coconut.
2. Put the grated coconut flesh onto a tray and put it in the sun to dry.
3. Dry it for 2 to 3 days stirring it regularly so that it will dry evenly.
4. It should feel dry. Dried grated coconut will keep for several weeks if stored free from moisture. It can be used for baking or in fruit salads.

Prawns in coconut shells

Four servings:

500 grams (1 lb) prawns or shrimp (about 15)

1 small green pawpaw

2 mature coconuts

Salt

1. Boil the prawns in 1 cup salted water for 5 minutes. Save the prawn water. Shell and remove the heads from the prawns. Chop the flesh.

2. Grate the coconuts and save the shells. Prepare the coconut cream, using the prawn water.

3. Wash the pawpaw thoroughly, about three times to remove the sticky sap. Grate or chop into small pieces after removing the seeds.
4. Put the pawpaw in the coconut shells with the prawns and coconut cream.
5. Cover with a banana leaf or grease-proof paper. Bake 1 hour in an earth oven or regular oven.
6. Serve in the same shell.

Toasted coconut chips

Four to six servings:

1 mature coconut

1. Cut the coconut in half.
2. Place the coconut in the hot sun, solar dryer, or copra dryer.
3. When partially dry, remove coconut flesh from the shell. Remove the thin brown peeling.
4. Slice very thinly and spread on shallow baking pan.
5. Place in the hot sun or in a solar dryer.
6. Dry for 1 or 2 days or until no moisture is left. Stir several times.
7. Keep in container or wrapping that will keep it free from moisture.
8. Serve as a snack for children or as an appetiser.

Chicken in coconut cream

Four to six servings:

1 bundle Chinese cabbage or any green leafy vegetable
1 yam, peeled
2 potatoes or sweet potatoes, peeled
2 cups thick coconut cream
1 chicken, cut into pieces
2 onions, chopped
2 tomatoes, chopped (optional)
2 cloves of garlic, chopped (optional)

1. Wash and chop the Chinese cabbage or other vegetable leaves.
2. Cut the root vegetables into pieces.
3. Pour one cup of coconut cream into a baking dish.
4. Arrange all of the ingredients in the dish.
5. Pour over remaining coconut cream. Cover.
6. Bake in a moderate oven (180°C or 350°F) for 2 hours.
7. Serve hot.

Note: Instead of baking in a dish, the ingredients can be wrapped in softened banana leaves and baked in an earth oven.

Coconut sauce for fish

Ten servings:

2 mature coconuts, finely grated
4 cooked prawns or shrimp

$\frac{1}{4}$ cup seawater

1. Shell and remove the heads of the shrimp or prawns. Wrap them in a muslin cloth.
 2. Crush the wrapped prawns or shrimp into the finely grated coconut, using a rock.
- Occasionally dip in seawater and continue to crush until nothing is left inside the cloth. Mix well.
3. Line a bowl with softened banana leaves. Pack the coconut mixture into the bowl and cover it with another banana leaf. Use the coconut shells to hold down the leaves.
 4. Leave overnight.
 5. Chillies may be used as flavouring.
 6. Serve in the shells as a sauce with fish.

Note: This must be used the day after it is made as it does not keep well.

Pumpkin pudding

Six servings:

6 medium half-ripe coconuts with good flesh inside

$\frac{1}{2}$ pumpkin, peeled and chopped

1 cup sugar

Salt to taste

1. Cut tops off coconuts. Pour out coconut water. Put aside.
2. Add sugar, and salt if desired, to the chopped pumpkin. Mix well with a little of the coconut water.
3. Fill coconut shells with mixture.
4. Bake in an earth oven or a moderate oven (180°C or 350°F) for about 1 hour.
5. Cool and serve with thick coconut cream, if desired.

Fish in coconut cream

One serving:

2 tablespoons tinned or cooked fresh fish

4 tablespoons taro, cooked and mashed

4 tablespoons taro leaves, cooked and mashed

4 tablespoons thick coconut cream

1. Mix the taro leaves with the coconut cream, fish and mashed taro.
2. Cook for 5 minutes in a pot.
3. Cool and serve. Either mash or sieve the mixture for infants below 6 months of age.

Note: This is an excellent weaning food and can take the place

of expensive tinned baby foods.

Green coconut drink

Ten servings:

6 green coconuts
4 lemon leaves

1. Halve the green coconuts.
2. Pour coconut water into a bowl, saving the shells.
3. Scoop flesh out of the coconuts into the bowl and mix it with the coconut water. Prepare fibres from the inside of the coconut palm mid rib to whip it. Cut the fibres very thin. They are stiff and act like a blender to cut the coconut flesh. Whip the water and flesh until the flesh is cut into small pieces.
4. Put mixture in a pot and bring to the boil. Add lemon leaves and then simmer gently for 15 minutes.
5. Serve hot or cold, using the coconut shells as a cup.

Note: This is an excellent drink for nursing mothers and young babies.

This leaflet is the eighth of a series devoted to the uses of local Pacific foods. Other leaflets available in this series are:

- Leaflet 1 - *Taro*
- Leaflet 2 - *Pawpaw*
- Leaflet 3 - *Mango*
- Leaflet 4 - *Guava*
- Leaflet 5 - *Cassava*
- Leaflet 6 - *Green leaves*
- Leaflet 7 - *Banana*
- Leaflet 9 - *Breadfruit*
- Leaflet 10 - *Pineapple*
- Leaflet 11 - *Citrus fruits*
- Leaflet 12 - *Pumpkin*
- Leaflet 13 - *Sweet potato*
- Leaflet 14 - *Yam*
- Leaflet 15 - *Nuts and seeds*
- Leaflet 16 - *Legumes*
- Leaflet 17 - *Fish*
- Leaflet 18 - *Seafoods*

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